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CONTENTS.

Terms of the Southern Agriculturist.

Three Dollars, payable in advance;—for two copies $5; Societies and Clubs can be supplied with ten copies for $20, payable in advance.

To the Agricultural Societies of South-Carolina.

Mr. Ruffin has consented to attend a Convention of Delegates from all the Agricultural Societies of the State, at Monticello, Fairfield, on the 5th July next, in consonance with the resolution of the Monticello Planters' Society, at its March Meeting. Delegates are, therefore, referred to the address of Mr. Ruffin, as to the sort of information required, and the manner in which it is to be embodied. *See May Number.*

It is most earnestly desired, that all existing Societies, as well as those that may yet be organized, will send delegates, prepared to furnish the Agricultural Statistics of the State, and to suggest and aid in the discussion of all subjects relevant to the object of Mr. Ruffin's appointment.

JAMES B. DAVIS, *Chairman of Committee.*

P. S.—Every effort will be made to secure comfortable accommodation for the delegates.

THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. III. FOR JUNE, 1843. No. 6.

ASHES.

To the Editor of the Farmer's Monthly Visitor.

Mr. Hill,—I have read in several of the agricultural papers, within a few months past, various accounts of the value of ashes in agriculture, both leached and unleached; and in most cases their application was attended with decidedly beneficial results. But there is a great difference in the value of soapers' leached ashes, and those from the pot or pearl-ash factory. Dr. Dana says, "the soap chandler, in leaching ashes, uses about one peck of lime to each bushel of ashes." This is used for the purpose of taking up the carbonic acid in the ashes, which makes the ley *caustic*; it then readily combines with the oil or grease, and forms soap. The lime used with the ashes is "quick lime," or in other words lime that has had its carbonic acid driven off by the process of burning. After being leached it is carbonate of lime, from the carbonic acid derived from the ashes, and is chemically the same as before being burnt. Then in 125 bushels from the soap boiler's, we get 100 bushels of leached ashes, and 25 bushels of carbonate of lime. The manufacturer of pot or pearl-ash, covers the bottom of his leach-tubs with swingle tow or straw, and puts over it a bushel or two of slacked lime, and does not renew the lime again during the season of making; consequently, there is no lime mixed with the leached ashes from the potash.

From the above facts, every one will see there is a material difference in the value and effects of the two kinds. Therefore, the farmer that uses leached ashes from the potash, expecting to realize the same results as those do that make use of soaper's ashes, will be likely to meet with disappointment. I have never seen Dr. Dana's "Muck Manual," but have read a few extracts as published in the agricultural papers. In one of them, the Doctor goes into a calculution to prove that soils are not exhausted of their lime and ashes by cropping or cultivation. For by his figures he makes out that an acre of soil to the depth of six inches "contains 3,626 lbs. of lime, and 73,311 lbs. of potash, or nearly 1¾ ton

of lime, and 36 tons of potash." Well, every farmer must say there is enough in all conscience of lime and potash in his soil;—and I do not at all dispute the Doctor, but if there is that amount I believe it is nearly insoluble, and therefore of little use. Liebig says, the lands in Virginia, by long cultivation, become entirely unproductive in wheat, for *want* of potash in the soil; he says, (if I recollect right, it being more than a year since I have seen his book) that there is twelve pounds of potash, annually carried off the soil, in the grain and straw of an acre of wheat—1200 lbs. in a hundred years. But according to Dr. Dana's statement, there would be left *there*, in the soil, some 36 tons of potash per acre. Now, Mr. Editor, I am a "plain, practical, every-day farmer," and shall not attempt to decide, where learned doctors disagree. But being willing to contribute my might, for the benefit of our *craft*, I will state a few facts, and give my views, with the hope that they may result in further investigations, but not having the happy talent of saying much in a *few words*, I hope you and your readers will excuse the long yarn I am about spinning.

I think I can furnish a few facts, to prove that the application of ashes to to the soil in addition to the 36 tons, is attended with beneficial results. I believe also the part that ashes perform in agriculture, is not fully understood. The general opinion is, that it acts as a stimulant to the growing plants, and a decomposer to vegetable matter in the soil, and perhaps the above opinion is partially correct. I apprehend the most important part ashes perform in agriculture, is in decomposing *silicia*, and rendering it soluble, so as to be taken up by the rootlets of plants, and by proper vessels carried to every part, and there assimilated and applied to the various purposes for which nature intended it, viz: to form the skeleton of the plant or tree—the glaze on the corn-stalk and kernel, the outer covering upon wheat and other straw and grasses, &c. The material of this glaze is derived from that kind of rock called quartz, (sometimes called rock chrystal, or white flint stone;) it is dissolved and rendered soluble by an alkali. Some kinds of trees require a much larger quantity of their structure than others, and produce a much greater amount of ashes, upon being burnt.—The burning of wood converts its again to silica; the insoluble part of ashes is mostly silex. Oak requires a much larger amount, as it is much heavier than pine wood. To prove the solubility of silica by potash, I will state a few plain facts, because we common farmers want facts, and illustrated in a way that we can understand them. From the fact that ley dissolves the silica in wood, tubs for leaching ashes are usually made of pine, as they are not so powerfully acted upon by the ley as if they were made of oak. An oak tub, after having been used a few times for a leach tub, would have its silica dissolved, and a stave four inches in width upon being dried, would shrink to two inches, wholly in consequence of the dissolving of the silica (gritty part.) But the ashes do not operate upon the vegetable tissue or fibre of the wood.

When it was the custom of farmers' wives and daughters to spin their thread from flax, the next process was to boil it out in *ley* to soften and remove the harshness of the thread by dissolving the minute particles of silex; but it did not destroy the strength of the vegetable texture. Manufacturers of paper from straw go upon this principle: the straw is boiled in lime water or ley, the glaze upon it is dissolved, and the vegetable fibre is unharmed. From these facts, then, it would seem the alkali acted upon the inorganic, rather than upon the organic or vegetable matter.

Dr. Dana's statement of the amount of potash may be correct; but I will try to prove that I am right in my conjecture, as to its being insoluble, and therefore inert. Common granite is the prevailing rock in New-England, and is composed of three different minerals—quartz, felspar and mica; quartz is supposed to be of an acid nature—felspar contains 12 to 15 per cent. of potash—mica from 5 to 8 per cent. of potash. Chemists tell us that the rootlets of living plants and trees, have the power of decomposing *granite* rock, to obtain the potash we find in their ashes. 'Tis said, "the living plant is a consummate analist." I will, though with much diffidence, give you my theory of plants decomposing rocks.

The decomposition of vegetable matter always produces an acid —or in other words the decaying or rotting, or more properly the slow combustion of vegetable matter partially converts it into carbon. The oxygen of water combines with the carbon and produces carbonic acid. This acid in its liquid and gaseous form, having an affinity for the alkali in the rock, dissolves it; the alkali dissolves the silica, (quartz,) and by the endosmose principle of the living plant, the water holding these in solution is drawn up by the rootlets, and these salts disposed of and assimilated to the purposes designed by the first great cause. In proof of this position I forward you a piece of rock, not acted upon by the "living plant," but by decomposing vegetable matter, and it will convey to your mind a better idea of my meaning than I can by the pen.

In some situations, there is a superabundance of alkali and silica—in others just the quantum needful; and in others a deficiency. These propositions I think I can explain to the satisfaction of you and your readers. Upon the banks of a small river, running through this town, there is frequently a strip of land one or two rods in width, and sometimes several rods in length, a few feet above the bed of the river. Upon every overflow of the banks by a freshet, there is left upon them a deposite of gravel and fine sand; yet every year these strips produce a tolerably heavy crop of red-top grass, generally free from any mixture. When secured in good order for hay, it has every appearance of first rate winter fodder. Yet our cattle will not eat it unless nearly driven to the borders of starvation. Again, there is a similar kind of grass, only more wirey and jointed, growing upon our gneiss and granite ledges, and frequently quite a thick growth of it, where the soil is but two or three inches in depth; it is red-top

grass, but from its small and narrow leaf and wirey appearance, but few persons would suppose that it was the same kind of grass, that was growing within six feet of it, where the soil was deeper. The grass on the river bank, from the comminuted and fine particles of quartz, feldspar and mica, takes *on* and *in* such a quantity of silica, that it is hard and difficult to masticate, and probably it is not so nutritious, as if grown where there was more vegetable matter in the soil. That, upon the ledges, the roots of the grass rest directly upon the rock and decompose it: this contains more silica, and is harder than that upon the river bank. This establishes my first proposition.

There are other situations where all the necessary constituents for a perfect developement appear to be rightly balanced. With such spots all our farmers are familiar. They are found wherever the wash from rocky or gravelly roads is carried over grass lands, the wheels of carriages and travel on the road are continually grinding to powder the component parts of stones and rocks in the road, which renders their salts soluble. This with the animal and vegetable matters are sprayed over the ground by every heavy shower; the result is a heavy crop of grass. Herdsgrass in such places is frequently found four or five feet in height, standing perfectly erect till mowing time, and affording palatable and nutritious food for cattle. This I offer to sustain my second proposition.

My third was, that there were others, where there was an absolute deficiency of potash, and silica, but an abundance of nutritious matter. Where a piece of land has the wash of a barn, the grass starts early in the spring, and bids fair to yield a great growth of grass; but for want of stamina it frequently falls or lodges before it heads out, and when made into hay it will weigh light according to its bulk: much of this is occasioned by a deficiency of silex. The same results are frequently exhibited on reclaimed meadows, where there is a great amount of decaying vegetable matter. A compost of manure, with a large quantity of ashes and fine sand, is the rich dressing for such spots.

When the primitive growth of wood on our new lands is felled, and burnt upon the ground, and there is sometimes two or three hundred cords per acre, and none of the ashes carried off, we almost invariably obtain a heavy crop of wheat or rye. I have known of more than 50 bushels of wheat, or 60 bushels of rye per acre on such lands. The intense heat shivers up the rocks: the great amount of alkali readily dissolve the disintegrated rock, and, in its soluble state, it forms a stiff stalk, with a hard, thick glaze upon the straw, which prevents the rupturing of the sap vessels; the sap, instead of oozing out upon the stalk and rusting, is carried to the head of the grain and fills it with a heavy, plump kernel. The crops of grass that follow for several years correspond with the grain crops, but ultimately the vegetable matter is used up, and nearly all the *soluble* potash is used up—so that the

farmer must resort to the plough, and manure to get a fair crop again.

Every practical farmer who has attempted to raise wheat on highly manured land that has been long cultivated, knows that it is liable to lodge, and very frequently rust or mildew. These two evils might, I think, be nearly remedied by the application of the right amount of ashes—if that *right* amount could be *ascertained* and *obtained* by the farmer. As to the amount, he need not fear of getting on too much, if he will just reflect how much is left upon an acre of burnt land, where two or three hundred cords of hard wood is converted to ashes; but in all probability a *very* much less amount would answer. I conceive there is but little difficulty in any or every farmer's obtaining his supply, by ploughing up a small patch of sandy or gravelly sward land and letting the furrows remain till dry, then commence a fire, with a small quantity of wood, and gradually pile on the sods, and very large heaps may be thus converted to ashes. The vegetable matter would be burnt, the particles of quartz, feldspar and mica would be broken and shivered thereby, rendered soluble, and afford those very salts so essential to a good growth of grain. After the mass had become cool enough to be removed it should be put under cover, to be applied to his wheat ground, after being ploughed in the spring. In all probability fifteen or twenty cartloads would have the desired effect, and the good effects would also be felt for several years by the succeeding crops.

Frequently promising crops of wheat are almost entirely destroyed by rust. On highly manured lands, if there happens to be a day or two of warm, steamy, good corn weather, in July or August, at about the time wheat is in the milk, the rush of sap is so great, that if it do not produce apoplexy, it does that which is nearly as bad—it ruptures the *tender* and *inefficient* coating in the stalk; the sap vessels burst; the sap exudes, and forms a coat of rust, and the crop is nearly ruined. In some of the agricultural papers the last year, I read an account that wheat never rusted where it was sowed upon an old coal heath, and that grass and other crops always succeed well, and were luxuriant. I think this was attributed to the remains of the charcoal; but perhaps a part might be justly attributed to some other cause—to its furnishing a thicker coat of glaze to the grain, and preventing the rupturing of the sap vessels.

I might cite a great many more facts in addition, to satisfy any one of the benefit of adding to our cultivated soils, potash in a more soluble state than we find it, as locked up in sand, gravel, stones or rocks. You will find some of them in Mr. Colman's 4th Report, viz. Mr. Haggerton's compost of peat and barilla; Mr. Jarvis' account of glass factory manure; Mr. Whipple's statements in regard to the value of salt petre or nitre---that being about one-half potash; 102 lbs. of nitre contains as much potash as 79 lbs.

of pot or pearlash of commerce. He applies about 150 lbs. to the acre.

But ashes are also useful in agriculture for neutralizing acidity in soils, and for the formation of nitre or saltpetre for agricultural purposes.

In the 6th number (June, 1842,) of the Farmer's Monthly Visitor, there is taken from the "Albany Cultivator" an article or review of Dr. Dana's Muck Manual. In this article there is a statement made by the Doctor, and another by the reviewer, which I think are calculated to lead to erroneous conclusions. The Doctor says, his first principle in agricultural chemistry is "one rock and consequently one soil:"---from this he lays down his second principle, "that rocks do not affect the vegetation which covers them." The reviewer says that "rocks certainly exert a powerful influence on the soil that covers them in many cases," but this he says, "is owing to their *physical* condition, and not to their *chemical* constitution." Now I think, to the mind of every farmer, the plain English of the above would be this: All soils are derived from rocks; all rocks are chemically the *same;* ergo, the chemical constituents of rocks never affect vegetation.

For the sake of many of our farmers, I wish the above was true; but the weak and sickly appearance, and light and short crops of corn, we every year see growing upon soils containing sulphate of iron---iron pyrites, or what farmers more commonly call brimstone rocks, proves the above untrue. There are six thousand of acres of land in this State, that once yielded heavy crops of corn, that now with a dressing of fifteen or twenty loads of manure will not give more than the same number of bushels of corn, and without manure it would not yield five bushels per acre; and this decrease in amount of crop, is almost wholly in consequence of sulphurous and sulphuric acid in the soil, derived from the disintegration of rocks containing sulphur and iron. Hundreds of our farmers have dug solid and heavy rocks from the soil, and laid them into wall, and soon the oxygen of the air and water combines with the iron, and it is decomposed and converted to an oxide or rust; this sets the sulphur free, and that combines with oxygen and forms sulphurous or sulphuric acid, according to the amount of oxygen in combination with the sulphur. This renders the soil acid, and unfortunately the more this land is worked by the plough and harrow, the worse it is, by exposing the stone more and more to the action of the oxygen and eliminating increased qualities of sulphur.

When corn is planted on lands, containing this acid, derived from such rooks, it generally looks well and promising for a few weeks, at least as long as the plant draws its nourishment from the decomposing kernel. But after the rootlets on the main roots are formed, and they begin to fulfil their office, by absorbing water from the soil, a re-action takes place and the plant remains station-

ary for several weeks---the leaves assume a reddish purple color, the main root is corroded or rusted off, to the length of one or two inches, and the farmer generally lays all the blame to worms, while in fact, there may not be a dozen in an acre. After a while a new set of roots start out at the lower joint, but so few and weak, the crop is light, and a large portion of the corn in attempting to cut it, is pulled up at harvesting, by the sickle.

I think upon inquiry among farmers having land containing this kind of rock, you will find hundreds that will confirm my statements. Here the inquiry may arise, is there any remedy? Yes: unleached ashes will neutralize the acidity of such soils, (precisely as salæratus does sour dough,) by combining with the free acid of the soil and forming a neutral sulphate of potash. But I have my doubts about plaster of Paris being useful on such soils, for it is composed of 40 parts sulphuric acid, (oil of vitriol,) and 28 of lime; but the acid is neutralized by the lime, and therefore inert. But reasoning from chemical principles; if we apply to such soils, hydrate or slacked lime, it will combine with the acid of the soil, and the lime will be converted into sulphate of lime—plaster of Paris—and thus remove the free acid from the soil, in the ratio of 40 lbs. of acid to 28 lbs. of lime. It can also be remedied by *very* heavy dressings of manure; but that is not always within the reach of the farmer.

"It is well ascertained that different soils have different properties; prejudicial to the growth of some plants, and favorable to the perfection of others; and it would be a most fortunate circumstance, if these differences in the properties of soils were better understood, and more generally acted upon by the great mass of farmers. Notwithstanding the bad character I have given soils containing sulphur in excess, for growing corn: and for many other crops, it is equally prejudicial; yet is peculiarly favorable to the perfection of others. In Jones's "Conversations on Chemistry," page 136, speaking of *sulphur*, he says, "it exists in some vegetables, especially those of a *cruciform tribe*," that is, the tribe of plants consisting of cabbage, turnip, mustard, radish and cress, of every variety. In some respects this family of plants possesses peculiarties contained in no other tribe.

In the December number of the Genesee Farmer, page 185, there is an extract copied from the Farmer's Journal, Eng., on soils, by Wm. Chatterly, from which I make the following extract:

"The state of chemical combinations, in which the various ingredients of the soil are found, also materially *influences* its fertility, though such combination should differ somewhat for particular crops: for instance, wheat requires, that a portion of *silica*, should be in union with *potash:* and for clover, that *sulphur* should exist in the soil in the condition of a soluble sulphate. In confirmation of the above theories, I will relate a few facts that have come under my immediate observation. In 1837, I came into possession

of an old farm that had not a furrow ploughed on it for 20 years. In one of the fields there were 12 or 15 acres that had been yearly mowed all this time, and did not average 5 cwt. of hay per acre. Many of the rocks and stones in the soil were of the 'brimstone order.' That spring I ploughed about an acre and a half—being as far as I could judge, the best land of the field, manured with about 20 loads of manure; something over an acre was planted with potatoes, the rest with corn. From the friable appearance of the soil, and the long time it had lain in grass, I expected to have raised a good crop, but in July and August, I observed many of the tops wilted and dead. Upon examination, I found the stalks from the surface of the ground to their roots, entirely corroded or rusted off by some cause to me then inexplicable. I think the crop was less than 80 bushels per acre. The part planted with corn amounted to nothing except for fodder. The next year, ('38) all except one-tenth of an acre was manured with about four cart-loads of coarse manure, ploughed twice, and sowed with ruta baga about 20th of June—harvested 1st of November, trimmed close, and accurately measured, and the yield was 100 bushels—or 1000 per acre. In '39, the produce of turnips was very good. The years '40 and '41, in consequence of drought, the turnip seed mostly failed to vegetate, and what few did, the insects destroyed. The past season, ('42) I planted three small pieces of land with squashes and pumpkins. They were destroyed by the black bug: one of the pieces was set out with ruta baga plants in July; several very warm days succeeded, and the tops were killed to the surface of the ground; and it was many days before they showed any signs of life. When they were harvested in November, many of them were the largest turnips I ever saw. The other pieces were sowed late in July with English turnip seed by merely hoeing them in, and nothing farther was done to them till they were harvested. The product was nearly twenty bushels of as fine turnips as ever I saw. I cannot doubt but the sulphur in the soil exerted a beneficial influence upon the growth of the turnips."

My experience of four years in cultivating clover upon this kind of land, fully confirm Mr. Chatterly's statements; but from the length of this paper I must forbear to go into particulars.

The opinions I have expressed in this communication, I trust are correct; what I have stated as facts, I believe are so, but if I am in an error, I shall be happy to be set right, as I have no favorite theories that I wish to establish at the expense of truth.

Warner, Feb. 1843. LEVI BARTLETT.

Mr. Bartlett's Agricultural Essay, which will be found in this paper, is a masterly production, distinguished alike for sound sense, science simplified, and practical knowledge. It should be *studied* as well as read. [*Balt. Amer. Farmer.*

For the Southern Agriculturist.

ON THE MANAGEMENT OF A PLANTATION,

In reply to Queries addressed to several Gentlemen interested in Agricultural Pursuits;

By L. M. A.

August, 29th, 1842.

Dear Sir,—In reply to your two letters of interrogatories on planting, I must say that I make no pretensions to perfection in that great art, having for many years past contented myself with pursuing the older rules on the subject, and seeking convenience and comfort rather than profit. I will cheerfully, however, give you below, in answer to your inquiries, the result of my experience.

In *planting cotton* upon new land, I plant it the first three years in succession without resting it. I first lay off the new field with a bull-tongue plough, four feet four inches, and then list it with hoes; covering in all the trash and vegetable matter. Next, I bed it up with hoes ready for planting, which should be done by the first of April, or at least four or five days before the full moon in that month, so as to avoid the frost which is apt to come on about that time. I always plant in chops on the beds from ten to twelve inches apart, leaving one stalk in a hill when brought to a stand. When I have proceeded to plant this land in this way for three years, I then rest it every other year until six crops, including the first three, shall have been made upon it, minding to change the rows every time from the beds to the alleys. After this, I mark off the field crosswise, and make the rows now cross the original rows; but instead of four feet four inches, I now make the beds three feet four inches apart; and so continue to plant it every second year for any number of years.

This method of planting, has reference to the common pine-lands which I plant. In working these lands with the hoe, a half acre in listing is the usual task for a full hand, and in bedding up, a half acre to the hand. In the first hoeing, in scraping down, an acre to the full hand, is a task. The next hoeing is drawing up and thinning out to three or four stalks in a hill, when a half acre is the task. So I continue to scrape down and draw up until the crop is made. At each working I am careful to have it thinned out, so as to bring it by the third or fourth working to a stand of one stalk in

a hill. Our common pine-land will usually stand without injury for fifteen or twenty days between workings. I never plough my cotton at all; but continue to work it with the hoes until time to go to picking. I have never manured cotton.

I have always *planted corn* on the oldest and most worn out land I have, endeavoring to change the fields every year. I commence breaking up these fields pretty deep, with a shovel-plough, about the first of November, because they will have been sown in small grain, or permitted to grow up in weeds the year before. I lay off the land in rows, with a bull-tongue plough, five feet apart each way, running three furrows together one way, and crossing them with one furrow the other way. I then begin planting about the first of March, and endeavor to have half of my crop planted by the tenth. The remaining half should be planted before the first of April.

With regard to *manuring*:—In manuring corn with stable manure, I first drop the corn in the cross and cover it slightly with dirt, by foot. I then put on about a double-hand full of manure, and directly cover that over securely with the hoe. The stable manure is sufficient only to go over a small portion of the crop, and I make other manure by mixing cotton-seed with straw and trash which has been trod in pens by the stock during the winter. This cotton-seed and pen-manure is carried out into the fields after the land has been broken up, and before it is laid off. I place this manure in piles of about ten feet in circumference at convenient distances throughout the field. And I mix the two manures in forming these piles, by putting down, first, a layer of pen-manure about six inches deep, and then upon it a layer of cotton-seed about three inches in depth, and so on alternately, making the whole pile in the proportions of one-third cotton seed to two-thirds pen manure.

I put a small double-hand full of this manure to each hill of corn, applying it in the same way as the stable manure, and have found it, I think, the more preferable of the two. I do not regard hoeing at all necessary for corn; but as I first put two grains in a hill, with the intention of keeping but one, it is necessary when about six inches high to thin it out to one stalk; and I then run the hoes slightly over it, drawing a little dirt around the roots of the corn. Corn should be ploughed from five to six times, allowing two acres

a day to each plough. In this way, I have tended my crop this year, and expect to average about fourteen bushels to the acre.

I plant as many *peas* as corn. I drop the peas when ploughing in the furrow next the corn-hill, when the corn is from six to eight inches high; and generally pick and house about half my pea crop.

I plant *potatoes*, from the first to the fifteenth of March, in rows five feet apart. I first make a deep trench with the plough by running up and down in the same furrow, which I fill up with the trash trod by the stock, and upon this draw up the bed, changing every year from the bed to the alley. I have planted potatoes this year, on the same land on which I have planted for the last twelve years consecutively. They are as fine as I have ever had them: and the eight acres of potatoes and five of slips which I have now, will feed an hundred persons, from the first of September to the first of January. The way in which I tend potatoes is, first, when grassy to draw down with the hoe, next to draw up, and next draw down; by which time the vines are too thick to hoe them, and I then have them picked over a time or two by hand, when they become grassy.

I have found the best way to feed negroes on potatoes, is just to allow them to dig, each for himself, whenever they may wish, and furnish them with bread and meat occasionally.

I have worked this year twenty-five hoes and six ploughs, in tending two hundred acres of cotton, one hundred and sixty acres of corn, thirteen acres of potatoes, one hundred and thirty acres of rye and oats, four acres of wheat, and one or two acres of rice.

I have no doubt but that there is much advantage in changing the one for the other, (cotton and corn land) when the land is all of the same quality. But I have not been in the habit of doing so; because there is considerable diversity in my lands, and I have chosen to plant cotton on my best land without manure; and corn on my worst, with it. Your obedient servant, L. M. A.

The neatest way, says the *Farmers' Cabinet*, to separate beeswax from the comb, is, to tie up in a linen or woolen cloth or bag with a pebble or two to keep it from floating; place it in a kettle of cold water, which hang over the fire; as the water heats, the wax melts and rises to the surface, while all the impurities remain in the bag.

For the Southern Agriculturist.

EXTRACTS FROM THE DIARY OF A PLANTER

Of St. Bartholomew's Parish, for three consecutive years, with some observations.

Land planted in 1840, *per hand.*

Cotton,	2½ acres upland, and 1 acre swamp, yield -	330 lbs.
Corn,	9 " " 2½ acres manured, yield	75 bush.
Blades,	- - - - - - - - yield	450 lbs.
Peas,	9 acres, only a part gathered, say,	20 bbls.
Rice,	¼ acre, much injured by ducks, - -	1½ bush.
Rye,	3 acres, seed saved only, (the general yield about 4 barrels per acre,) say - - - - - - -	1½ bbls.
Wheat,	½ acre, gathered about, - - - - - - - -	2 "
Potatoes,	¼ acre, yield about - - - - - - - - -	30
Slips,	$\frac{1}{6}$ acre, yield about - - - - - - - - -	25

Making 15⅔ acres, deducting 9 for Peas, which was cultivated with corn.

This year was remarkably wet, could not plough our field of 80 acres of corn for six weeks, and only ploughed it three times. My custom is to plant my corn as early in March as I can; after the first ploughing, hoe and thin out, and transplant, which I much prefer to replanting. I plant my peas the second ploughing, and the two last ploughings are given the same way, thereby giving the corn and peas a pretty good bed; immediately after the last ploughing, the corn and peas are hoed, drawing very little dirt to either. Corn planted 5 by 5—where manured 4 by 5.

My *cotton* is planted in beds 4 feet apart, made with the hoe, and planted with the same 18 to 24 inches in the bed—if the land is very good, I leave one stalk, if not, two stalks are left. I first weed down, then draw up and thin out. Jus before drawing up the last time, which is the fourth working, I run my ploughs lightly in the alley to destroy any grass that may be there, and lighten the work for the hoes; this ploughing is given soon after laying by corn and while the hands are engaged hoeing the corn; in some four or six days after the ploughing, it is then drawn up; should it become grassy, it is again scraped lightly down. If it be well bedded, it is not likely to become grassy unless the season is a wet one.

My *wheat* is commonly put in, in the last week in October, or first of November. If I get 7 or 8 bushels to the acre, I consider it a pretty good crop. I look upon our climate as unfavorable to wheat, it is too hot and moist; seven years out of ten it will be blasted by rust or black blast, both occasioned, in my opinion, by heat and moisture.

My *rye* is put in, in the months of November and December, it should if possible be gotten in by the 15th of November, as late sowing seldom yields exceeding two and three bushels per acre, when the same quantity of land sown early in November, will yield four to six. I consider five bushels a good crop. I never cut more than I want for seed, I turn my stock upon the balance, which serves to keep them fat, commonly till 1st September.—Many object to rye, from the supposition that it injures their mouths, I have been sowing it twelve years, and have never had but two animals injured by it, these were two hogs at different years, whose mouths were so much affected they could not eat corn, yet they were good pork, and were not lost. I never suffer my horses to run on it in the day, but always at night, when the beards are softened by the dew—thus running on the rye with one feed of corn, they mend daily, and I consider it next to corn, the best grain crop we make in this country.

Rice is made only for family use.

My *pea crop* I consider of vast importance, horses fed once a day upon them, and let that be at night—improve daily in their condition, even if this be in plough season; it is an advantage to wet them a few hours previous to giving them to the horse; I feed them in the hull, which is a great saving of blades—a hand will gather twenty bushels in the hull per day, which will yield two bushels of clean peas—five to seven bushels to the acre is a pretty good crop.

Potatoes.—This is an important crop. I plant in good sized beds five feet apart, putting eight to ten bushels cut about two and three inches long; I formerly planted early in March, making my bed during, or soon after a good rain, and invariably failed to make a good crop. This year, 1840, I made up my beds of four acres good cow-pen land, which had yielded finely, the day after the heavy rains of the 12th of March, and planted on the 14th, they

were well attended, and I am satisfied the yield was not ten bushels per acre. Another seven acres was planted about 15th April, when tolerably dry, on land not manured; and finer potatoes I never made, the yield was about 125 bushels per acre. I had for several years abandoned planting in March, but this four acres was planted to keep my hands employed till the land should dry, so as to go on with other work. A wet season suits potatoes best, after they are up and hoed the first time.

Slips, I commonly plant in July and August, according to circumstances, on cow-pen land. I have my land broke up some little time before planting—a light rain will put it in fine condition for planting; if there comes a heavy rain upon it, I wait several days, until it comes to a medium between wet and dry, I lay the ground off, crossing the breaking up, and plough out the middles with the shovel-plough, and draw up one side with the hoe, it is then flattened a little, and the vines, three in number, are laid down and the other side of the bed is drawn upon them; I commonly hoe them once. I have heard of two and three hundred bushels being made to the acre but I take this as being altogether suppositious—this year my slips were so remarkably fine and apparently so numerous, I was induced to measure one quarter of an acre which measured 37½ bushels, or 150 bushels to the acre—commonly 100 bushels in this district, is a good crop.

A few remarks and I am done with with this year. You will perceive my cotton crop was remarkably short, the swamp was almost an entire failure, yielding but about 300 lbs. per acre, when for two years it yielded 800 to 1000 lbs. per acre; the greater part of the upland was second and third year land, which also yielded but about 300 lbs. per acre, which is commonly good for 600 lbs. per acre. I commonly top my cotton the first week in August, if it be two feet high. I run one plough to four hands, viz. the fourth hand is a plough hand—used in my cotton only, as stated above.

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Land planted in 1841, *per hand.*

Cotton,	6⅓ acres,	all upland,	25 acres manured, yield	700 lbs.
Corn,	6 "	"	2 " " "	66 bush.
Blades,	-	-	- - - -	400 lbs.
Peas,	6⅓ acres,	only a part gathered,	rather short,	20 bbls.

Rice,	¼	acre, injured by drought, yield, - -	1 bl.
Rye,	4	acres, saved seed, crop very fine, -	2 "
Wheat,	¼	acre, much injured by rust, - - -	1¼ "
Potatoes,	¼	acre, - - - - - - -	20
Slips,	¼	acre, - - - - - - - -	30

Making 17⅔ by deducting 6 acres of peas planted with corn.

As *cotton* is the first article mentioned above, we will begin with that. Land all listed with the hoes during the months of January and February, some 3½, the balance 4 feet apart; the crop gotten in by 20th April. I usually begin to plant as early in April as I can; I plant one acre to the hand in chops 18 to 20 or 24 inches on the bed, and cover with the hoe. Immediately as I get through planting cotton, I go to moulding and transplanting corn, after which, we go to the cotton and scrape down, if it has come up and grown readily, I thin by chopping out, down to 2, 3, and 4 stalks, if not, the thinning process begins with the second working which is a drawing up—I alternately draw down and up, until the crop is made. This year I directed the overseer to top the cotton the first week in August; to satisfy himself in relation to topping he left half the crop not topped, and I am satisfied I lost 100 lbs. per acre. Where I manure cotton in the drill with compost manure, I prefer opening a furrow with a five inch plough, fill the furrow with manure, and sow the seed on the manure, cover with the plough and flatten the bed by running the back of the hoe on the bed; when I manure with stable manure, I prefer edging the land with a narrow plough, and crossing it with the same 3½ by 3½, drop the manure in the cross, the seed on the manure, and cover all with the hoe—two hands will manure and plant an acre a day; when planted in checks, I work but one way. You will perceive my crop this year was double the last.

Corn.—Planted from the 1st to 15th of March; ploughed as last year—one field was not hoed in the laying by, and the loss was very material. It is very important to hoe corn in July, in a week after the last ploughing, the sooner the better—I seldom plough more than four times; which is once in 15 to 20 days—the thinner the land, the oftener it should be ploughed, and shorter the intervals of ploughing; I am satisfied the last hoeing gives me on an

average one bushel more to the acre, which amply pays me for the working—I hoe one acre to the hand. I prefer, when it is convenient, to gather my corn in rainy weather; and though I may gather but a day or two at a time, I prefer it, because it does not interfere with picking cotton, and it is not liable to be eaten by weavels—I put my corn up in the husk; this is supposed to keep out the weavel; this is not so, if it be put up when very dry. I plant the *gourd seed* corn entirely, selecting my seed from the house, taking the largest ears with the largest cobs. At one time I selected my seed from the field from stalks having two ears, I followed this three years, at the end of which time I saw there was an improvement in the number of ears, but degeneration of seed and size of ear, and I think very little improvement in quantity—I prefer a good large ear to two small ones—this is another reason why I plant 4 by 5, and 5 by 5, one stalk; two stalks perhaps, would yield me two small ears, but I prefer one large one.

I have nothing more to say in relation to Peas, Rice, Rye and Wheat than I have already said.

Potatoes—Want, when planted in April, but three workings and a hand-picking—formerly after the first scraping down I would run a deep furrow upon the side of the bed, and throw a considerable ridge upon the grass in the alley, having the potato bed not more than 8 or 10 inches thick, let them stand in this condition 8 or 10 days, then throw the ridge out of the alley with four furrows, and draw up—the first ploughing I conceived injured the potatoes materially, as I never made a good crop—I now scrape them down and soon after run four furrows in the alley, throwing the earth to the beds, and soon after draw them up and never touch them, further than to have the grass pulled out with the hand. Potato land should be broken up in January, and then again, upon the days of making your beds for planting; in this way, the same land may be planted for ever, if properly manured. I would here state a fact, which is very little known, with regard to saving potatoes through the winter:—Potatoes should not be dug before the vines are thoroughly dead, and the growth of the potato effectually checked by the cold weather; this will commonly be the case by the 15th of November; then dig in dry weather, put 30 to 40 bushels in a bank, placing dry pine-straw under them and over them, then cover

with earth not less than one foot thick, and leave no air holes.—These air holes are as destructive to potatoes as a draft of air would be to a delicate female—they may or may not be sheltered. Last season, to prove the fact, I dug a bank of yam potatoes one week after putting up my winter supply, on a rainy day, put them up wet, covered with wet straw and earth, in the same way as the others—never troubled them till April, when I had them taken down, and found not exceeding one dozen sound potatoes in the bank.

I prefer planting slips, yet small potatoes will yield about a half crop; they should be planted only when slips cannot be had. Yams and Spanish potatoes are decidedly the best kinds, though I plant of the red-whites also.

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Land planted in 1842, *per hand*, 17½ *acres.*

The crop of this year about the same as last, as regards the quantity of land planted; how it will yield, I am at this time at a loss to say, further than the corn crop is much better, though ploughed but three times, excepting one field, which received its regular number of ploughings and hoeings. The cotton crop will not be so good by ¼ or ⅓, in consequence, I think, of a long drought in the last of August and first of September, succeeding a succession of rains in July and first of August. The pea crop will also be short from the drought in September. The potato crop will be a pretty fair one.

I will proceed to give you my ideas in a more general way upon the various questions asked.

1st. *For Cotton.*—If the land was planted in cotton last year, in the month of January, or as early in the year as I can, I commence by *pulling up* the old stalks, if they are not over 2 or 2½ feet high, and laying them in the alley; I have one acre pulled to the hand, at the same time gathering up all bark and trash which is not to be listed, in a pile and burn it; thus I go through a field, when I return and list it—making the list rather than half as large as I intend making the bed; thus we go through this operation. About the middle of March I commence bedding, and bed one half of what is intended to be planted—we turn round and plant immediately; we then go on bedding the balance, and plant. I list half an acre and bed half

an acre to the hand; I hoe an acre and bed half an acre through the whole of the working season, unless something should interfere to prevent it. If about to plant a field which has rested after cotton, the weeds are pulled up by hand and laid down in the alley, in January or February, according to circumstances, and list upon as stated above; if the field rested after corn, and am now about to plant it in cotton, I have it laid off with a narrow plough very shallow, when I have the weeds and old corn-stalks gathered up between the furrows, and laid in the furrow and list upon them. I plant an acre of cotton to the hand in chops; where cotton is made with the plough, I prefer drilling it, but as I have abandoned that mode of cultivation, from the conviction that our lands will not warrant us in making so large an investment in horses, I will say nothing about it.

Corn.—Corn land should be broken up every year, whether it was planted the previous year in corn, cotton, or rested—this breaking up should be delayed as long as possible, say till 1st February, when one half of the land can be prepared to be planted by the 1st of March; the balance should then be broken up and planted immediately—corn invariably comes up sooner and grows off more rapidly. In all my planting operations, I make every year count for itself, when the year sets in, I set in with it, preparing for a crop; I never break up land in these latter years in the fall, as a preparation for corn the next; you rob Peter hoping to pay Paul, and you cheat both; land turned over in October and November, will not yield by one quarter as much, as when done in February and March. I plant and plough in 4 or 6 weeks; when I *transplant*, mould and thin—I *never replant*; transplanting may be successfully done in May.

Peas.—I plant in May in old land; if the land is fresh or strong, I plant in June, and as late as the first week in July, when giving the corn the last ploughing. Pea-seed should be selected from the field once in three years—I usually pick as many as will feed my horses, milch cows, and poor cows and calves through the winter—I feed my horses with them at night, giving each horse about a bushel in the haums, occasionally wetting them with salt and water—when I have had them to feed my horses at night during plough season, I have invariably found them in better

order than when fed with corn alone. I have planted between the corn, and by the side of the corn, and I much prefer the latter—I put one bushel to five acres.

I have said all about potatoes, slips, wheat and rye, &c., I need say—I might go on and state a number of experiments in cotton and corn, but this I will pass over.

In relation to resting land, I am of opinion the land is not materially improved, but is saved from getting worse. I am also satisfied it should rest but one year; in all this country where land rests one year, there comes on it a thick growth of *hog weeds*, which has but little root, and abstract very little from the soil, and when ploughed in decomposes very soon; if the land rest the second year, there comes on it a rank growth of Jerusalem weeds and broom-grass, than which nothing can be more destructive to land. *Hog weeds* if listed, or ploughed in a green state, decompose very quickly, and the benefit hoped to be derived from them is entirely lost before you plant your cotton or corn, and the land is materially injured. It will never do to turn in green vegetation, unless you plant on it immediately, and then I am satisfied the land is more or less injured. Hammock-land is much more benefited by resting than pine-land—I endeavor to rest as large a portion of my land as I can, and invariably let it stand untouched as long as I can previous to planting it—here I could relate some satisfactory experiment which is not specially called. In breaking up rested land, I have it turned up pretty deep; I direct that they touch the yellow sub-soil, but never, if possible, turn it up. I forgot to say in ploughing corn, I ploughed deep and close every time, unless the weather be wet, then I have the ploughs lightened; the dryer the season, the deeper I plough—scrapers wear-out more land, and ruin more corn, than any other plough, in wet or dry seasons.

No man can be a planter, or make a good crop, who is not daily in his plantation—he must, necessarily, be governed by circumstances, and his judgment and experience will dictate to him his course better than all the books in the world. No man can be a planter, or managers of negroes, but by actual experience and observation—all our planting operations and success depends too much upon fortuitous circumstances, to be trusted to inexperienced

hands, or neglected for the enjoyments of society or pleasure. Planters are, or should be, the happiest men in the world, because most independent.

Yours truly, C. K. A.

ESSAY ON THE USE OF MARL.

April 17th, 1843.

MR. EDITOR:—The following Essay on the use of Marl, was read before the Black Oak Agricultural Society, at its late anniversary meeting; by Dr. John S. Palmer, of St. Stephen's.

This is believed to be one of the first systematic operations in the use of marl in the State, and furnishing as it does highly satisfactory results, it may be an inducement to many who have the means in their power to avail themselves of it.

Respectfully, H. W. RAVENEL,
Secretary of Black Oak Agricultural Society.

To the Agricultural Society of St. John's, Berkley:

GENTLEMEN,—I have been urged by Mr. Ruffin, who lately visited our neighborhood, to lay before you the result of our experiments and progress in the use of marl.

It may not be in our power to submit such exact statements as would be desirable on a subject of so much importance, yet if we can show you, that so far as we have tried the system, it is not only practicable, but highly satisfactory, we trust it will be an inducement to many who are now hesitating, to commence forthwith, and satisfy themselves by actual experiments.

Dr. Robt. M. Gourdin, (whose plantation at Lenud's Ferry lies partly in Georgetown, and partly in Williamsburg District,) has been good enough to furnish me with the following statement:—A field of fifty acres of flat, sour pine-land, which had been belted in 1838, and roughly listed in 1839, was prepared for planting in 1840, by changing the course of the beds across. Upon this new list, he brought marl one mile and a half, and applied it at the rate of one hundred bushels to the acre—excepting six acres, running the whole length of the field, one half acre in width. No memorandum was kept this year of the field, and no difference was

perceivable in the growth or product of the cotton. In 1841, it was again planted in cotton. Throughout the whole of the season, the marled looked decidedly superior to the unmarled. An accurate account was kept of the respective portions of the field.

The marled produced an average of one hundred and twenty-eight pounds of clear cotton to the acre, the unmarled but sixty-three. In 1842, no account was kept of the difference of product—but so manifest was the advantage of the marled over the unmarled, that it was a matter of serious regret that the actual difference could not have been ascertained. Dr. Gourdin has no doubt that the marled portion was considerably better this than the year previous. He is so well convinced of the benefit to be derived from marl, that he has applied it to twenty acres more this year, and contemplates a more extensive use of it hereafter.

My brother (Col. Samuel J. Palmer,) commenced in 1839 to marl---on a field of 24 acres which had been cleared about five years previous, and the preceding year had rested—after listing in the weeds, he applied marl at the rate of 100 bushels to the acre.

One portion of the field was a flat, whitish clay soil, the remainder, what may be termed a free, open soil, and more elevated. In 1836, this field had been planted in cotton, and produced one hundred and forty pounds clean cotton to the acre. In 1837 in oats, which, although not measured, yet the general appearance of the crop did not promise exceeding 10 bushels to the acre. It was then thrown out to rest as before observed. The product of this field in 1839, was two hundred and seventy pounds of clean cotton to the acre—and exceeded the general average of the whole crop. In 1840, it was assisted with trash and leaves under the list. The June freshet destroyed the whole of the first planting---it was replanted on the 15th of the same month; no account was kept of its product this year; but, as far as could be judged by the eye, it did as well as any other part of the field which had not been drowned. In 1841, it was again planted in cotton, and produced two hundred and twenty pounds to the acre. It was, unquestionably, the best field of cotton on the place. In 1842, it was planted in oats, eleven acres were reserved for seed, and yielded when threshed upwards of twenty bushels to the acre. The color and character of the clay-land which was marled, has materially

changed—and no one who remembers its appearance in 1836, will doubt the efficacy of marl. My brother has now one hundred and five acres marled, sixty of which was applied this year.

I proceed now to give you the result of my own experience in the use of marl, but regret that no account was ever kept of the difference between the products of the marled and the unmarled fields. In September, 1838, I commenced digging it out. In two wet days with all hands employed, I had about two thousand five hundred bushels heaped ready to be hauled out the winter following. This, however, was the only occasion on which I got out the material before the carts were ready to take it to the field.

It is a saving of time to apportion only so many diggers and loaders to each cart, as will, taking into consideration the distance and roads to the field, keep the work steadily and regularly progressing. In 1839, I applied marl on about 50 acres of land, at various rates. From 80 to 100 bushels was the usual quantity, but in some spots as much as 150 bushels were tried. Thirty-six acres had been in cotton the year before, and fourteen in oats.

The marl on these thirty-six acres was applied *under the list*, and I could discover no advantage this year from it. The season was one of the most propitious for cotton, and will be long remembered as such throughout this country. The fourteen acres which had been in oats, and where the weeds and stubble had been listed the autumn preceding, showed an improvement the first year that the marl was applied. It was land which originally must have been of the best quality, but had been sadly scourged by hard cropping before I got possession of the place. In 1840, it was planted in oats, and exhibited a most striking contrast to the crop which was on it in 1838. In 1841, it was again planted in cotton, and was 50 per cent better than it ever was. The last year I planted it in oats, and on such parts where hitherto the crop would be supposed good for 10 or 15 bushels to the acre, I am confident from 20 to 25 bushels were made. The growth of crab-grass and weeds which succeeded the oats, induce me to believe that this land will do better another year than a great deal of much fresher that has not yet had the benefit of the marl. In 1842, the 36 acres which had not since 1839, exhibited any material change, was planted in cotton after oats. The crab-grass was so fine in 1841, that I was induced to cut a large quantity for fodder before it was listed.

This field, from the lightness of the soil on some parts of it, I feared much would disappoint me in 1842; besides, except the occasional rest it had, when planted in oats, it had been in cultivation seven years consecutively. On some of the thinnest land, compost manure from the cow-pen was scattered, and if any doubt had existed previously of the capacity of marl to fix other manures in the soil, the growth and product of the cotton on these spots would have entirely dissipated them from my mind. On one half acre selected on account of its unproductiveness previously, about 100 bushels had been applied in 1839; the quantity visibly mixed up with the sandy soil, I apprehended would have proven injurious; but the beautiful growth, and early maturation of the cotton on this spot last year, induces me to think we do not apply half enough in general to our land. Last year I applied from 120 to 200 bushels to the acre on all the land marled; but, being satisfied with the gradual, but certain improvement, which a moderate quantity will effect, I have the present season fixed as a rule, to give to every acre 120 bushels and no more.

From the frequent interruptions from freshets, I have failed this year in marling as much as I intended, and have in all now little more than 100 acres. If I had no other evidence of the good effects of calcareous manures, than what has been furnished accidentally on my place, that alone would be conclusive.

In clearing some fields six or seven years ago, I found some spots heavily coated with lime, thrown out from the pits, made no doubt 40 or 50 years ago by the old Indigo planters. I was not surprised at first to see the cotton, or other crop, growing luxuriantly on these places—but up to the last season, I can not perceive any falling off in fertility. The long period which has elapsed since the lime was thrown out, must have given time to the soil to accumulate a large quantity of fertilizing matter, and the probability is, that its character is permanently established. These facts are cheering, and we may flatter ourselves that a new era has commenced in the agricultural improvements of every section of the State within the reach of marl. In the course of a few years, we may look to see marl made an article of internal commerce, and those who are now afraid to carry it 100 yards upon their own soil, may, when they shall have covered every foot of arable land in

their possession, be found supplying it at a profitable rate to their neighbors five miles distant. It is to be hoped that a fair trial will be given to marl by many of the members of this Society, and that our next meeting will furnish abundant testimony from all quarters on this subject.

N. B.—The marl used in our neighborhood contains from 90 to 95 per cent. carb. lime, as ascertained by analysis.

QUALITIES OF POTATOES AND CORN.

"We find in the New-England Farmer an analysis, by Dr. Dana, of Indian Corn, Ruta Baga, and Irish Potatoes. Of the flesh-forming principles, gluten, albumen, &c. corn contains in every 100 lbs. 1.26, (lbs.) potatoes, 2.07, ruta baga, 1.—Of the fat-forming principles, corn contains in every 100 lbs. 88.43 (lbs.,) ruta baga, 13; potatoes 24.34. Thus it appears that potatoes are much better food than corn to form flesh, and about one bushel of corn is equal to 3½ bushels of potatoes for fattening. Potatoes might be used with great advantage for work horses and cattle, to replenish their muscles. In fattening qualities they appear to be fully as valuable, in proportion to the cost of producing them, as corn. And it would seem that ruta baga turnips are in view of their cost, as good for fattening as potatoes. The public will not be a little surprised to find that potatoes contain near twice as much of what is called nutritive matter as corn."

The above paragraph we find in the *Baltimore American*, a paper conducted with distinguished talents, great discretion, and the most scrupulous regard for truth. Such being the character of that old and model-journal, we deem it our duty to correct some of the conclusions at which the writer has arrived:—

1. The analysis of Dr. Dana, does not justify the conclusion, that, in fattening qualities, potatoes are fully as valuable as corn, in proportion to the cost of producing them, and for the following reasons—*first*, because, they require as much manure to ensure a good crop—*secondly*, because, if tended as they ought to be, the labor is as great or nearly so—*thirdly*, because, notwithstanding they yield more bushels to the acre, than corn does grain, still the blades, tops, and indeed, stalks, should be credited as parts of the products of the corn, as well as the grain, as each of the former are available to the farmer, either as provender or manure; and indeed, with proper management, the cornstalks may be made as good provender as either the blades or tops, so that, if value of these three products be added to that of the grain, their aggregate worth will very greatly exceed that of potatoes—and *fourthly*,

when we come to compare their relative proportions of nutritive matter, they stand as 89.69 to 26.41, in every hundred pounds, which is as 3 11-12ths to 1 in favor of corn.

2. The conclusion, that potatoes contain near twice as much of what is called *nutritive* matter as corn, is contradicted by the facts developed by Dr. Dana's analysis, as will clearly appear by the following quotations therefrom:—

He states that 100 lbs. of corn contain of *flesh*-forming principles, gluten, albumen, &c.		1.26
Of *fat* forming principles, as gum, sugar, woody fibre, oil, &c.		88.43
		89.69
And that the same number of pounds of potatoes contain of flesh-forming principles,	2.07	
Of fat forming principles, as gum, sugar, &c.	24.34	26.41
In favor of corn,		53.28

Thus proving, by his analysis, that, in 100 lbs. of corn, there are 53.28 lbs. more of *nutritive* matter than there are in the same number of pounds of potatoes, and hence the great superiority of the former over the latter. It would have been perfectly correct for the American to have said, that the potato contains *nearly* twice as much of the *flesh*-forming principles as corn; because, their relative proportions stand as 2.07 to 1.26 in its favor; but then, as those constituent principles which form *fat*, are as much entitled to be considered *nutritive*, as those are which contribute to the formation of *flesh*—both being essentially nutritious, and only directed to different ends in the sustenance of the animal system—the deduction is erroneous, which presupposes that only to be nutritious which sustains the flesh. [*Amer. Farmer.*

IMPORTANT INVENTION FOR GRINDING CORN.

The Columbia, (S. C.) papers states that Mr. Boatwright has invented a Mill, for grinding Corn with the Cob, which will reduce the whole ear, cob and all sufficiently fine to be fed safely and profitably to stock of any kind. The inventor says that 100 bushels of ears being ground whole, will yield 85 bushels of meal, which from experiments made for the last 8 or 10 months, (including the last hard winter,) is equal to 75 bushels of good corn, and clear gain of about 50 bushels in every hundred, of good, wholesome food. The cost of the mill is $50 complete, and the apparatus of a Cotton Gin or Threshing Machine will answer for both. The machinery of the Mill is very simple, and so constructed as seldom or never to get out of repair; it will grind 100 bushels per day, with one man to feed and attend it. Mr. Boatwright sells the meal at the Mill, for 37½ cents per barrel; it also grinds grits.

[*Edgefield Advertiser.*

For the Southern Agriculturist.

THE CALCARIMETRE—A NEW INSTRUMENT,

For estimating the quantity of *Carbonate of Lime* in *Marls* and other *Calcareous Manures.*

THE necessity of a simple and ready method for analyzing calcareous manures, has induced me to make public the following one, which will no doubt be found to answer this demand, the importance of which is more especially felt at the present time, as there seems to be a determination among most of our planters to improve the soil that they cultivate, and calcareous manures are among the agents employed by them for this purpose. *In this species of mauure, the carbonate of lime contained*, appears to be the active ingredient, and a proper estimate of the quantity present, is the surest means of ascertaining their relative value.

Among the most ready methods ussd for this purpose, are Davy's Pneumatic, and Brand's method, modified by Rogers, the one estimating the quantity of carbonate of lime, from the bulk of carbonic acid given off, when the calcareous substance is treated by an acid, and the other by the weight of carbonic acid afforded by the same action; the principal objection to the former is, the complication of the apparatus, and for the second, it is necessary to be furnished with a more than ordinary pair of balances. The method about to be described is deprived of both these objections, with the additional advantage of affording more accurate results.

Without detailing the various steps taken to arrive at the present method, I will simply state that it is based upon treating the marl with a known quantity of acid in excess, the strength of which we know, and then finding out the amount of this excess, thereby knowing the quantity used to dissolve the carbonate of lime present, from which the quantity of carbonate is calculated.

In the application of this principle, it will be found that any thing like difficult manipulation is avoided, and that there is no calculation required. The first thing to be furnished with, is an instrument consisting of a tube about half an inch in diameter, and ten or eleven inches long, (Fig. 1,) graduated into 100 parts; the simplest form of this tube is such as is represented in the figure—the extremity (*a*) being drawn out and bent downwards, the opening being so small as to allow a liquid to flow out slowly—to the

upper part, for convenience sake, is adapted a perforated cork with a small tube, by which we are enabled to regulate the flow of the liquid used, in our experiments; the capacity of the instrument is one fluid ounce, and the name that I propose calling it is the *Calcarimetre.*

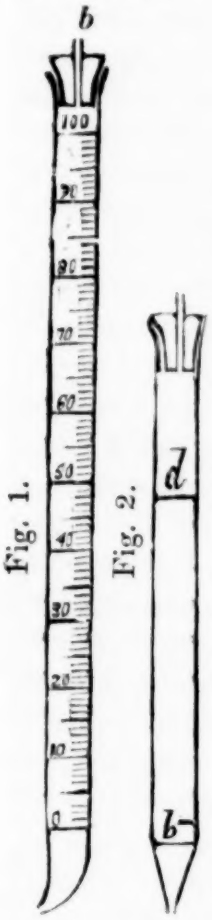

Fig. 1.

Fig. 2.

There is also another tube used, such as is seen in Fig. 2, it being about seven inches long; the capacity of this from the extremity *a* to the mark *d*, is equivalent to 50 degrees of the other instrument: there is a mark at the lower part *b*, the use of these will be hereafter mentioned.

There are two fluids used in this process, the one being diluted muriatic or nitic acid, and the other diluted ammonia, (common hartshorn;) the manner of preparing them is mentioned in the note appended to this article, and as the use of the instrument is the most important to be understood, it is as well to proceed at once to its description.

Manner of using the Calcarimetre, &c.

It is to this part of the article that I would particularly call the attention of those interested in this matter, as in it is to be found the method of analysis. Being furnished with the two tubes, the two fluids, a tea-cup or other convenient vessel, and a piece of Litmus paper,* a portion of which has been reddened by an acid, and having 50 grains of the pulverized marl weighed, we proceed as follows:—Place the marl into the tea-cup, and add to it about half a wine-glass of water; fill the instrument last described (Fig. 2.) with the acid solution up to the highest mark upon the stem, this is done by holding the instrument in the left hand between the forefinger and thumb, having the little finger upon the small opening, the acid being poured in, before withdrawing the finger,

* Litmus paper is ordinary paper colored by a blue substance called Litmus, which paper is turned red by an acid.

introduce the cork and place the forefinger of the right hand upon the tube in the cork, for the purpose of preventing the liquid flowing out when the lower extremity is left unprotected; after seeing that the acid stand exactly at the mark in the instrument, we let it flow gradually upon the marl, by simply withdrawing the finger placed upon the upper tube, facilitating the flow of the latter portion by blowing through the same tube—after all action has ceased, which is known by there being no longer any effervescence, the graduated tube (the Calcarimetre,) is filled with the solution of ammonia, in the same way that we did the last, so that the liquid will stand at the hundred point; this instrument is now transferred to the left hand, in doing this though, the point of it should be held over the cup, and also care should be taken to place the forefinger of the left hand upon the upper tube, (*b* Fig. 1,) this, as stated before, arrests the flow of the fluid, and by withdrawing it the flow continues, and by replacing it the flow again ceases; it is as well to hold the instrument slightly inclined downwards, taking care to keep the extremity out of the mixture in the cup. So soon as the first portion of ammonia falls in, the mixture is stirred with a glass rod, a little of it is placed on the blue part of the Litmus paper, and if it turns this paper red, we conclude that it is still acid, and continue adding the ammonia little by little, testing occasionally with the Litmus paper, and so soon as it is seen that the blue part is not altered, and on the contrary, the red part turned slightly blue, the experiment is finished, and by seeing whereabout the fluid stands in the stem, we are furnished with the number indicative of the percentage of cabonate of lime in the marl.

The accuracy of this method has been tested by comparing its results, with the results obtained by direct analysis made by both Professor Shepard and myself.

The rapidity of it, is evinced from the fact, that from twelve to fifteen analysis are made in the course of an hour, and so easy is it in its application, that in the course of half an hour, I taught it to a little negro boy of mine, about fifteen years of age, so that he now analyzes marls with a great deal of accuracy. There are some little precautions necessary, which it is useless here to mention, as this is intended simply to notice the construction and application of the instrument.

I will now attempt to explain in as few words as possible, the principle of the method:—The measured quantity of acid used, is

as before stated, exactly equal to the capacity of 50 divisions of the *Calcarimetre*, and dissolves precisely 50 grains of pure carbonate of lime, so that a quantity of acid equal to one division dissolves one grain of the same carbonate, and therefore, if we can find out how many divisions of acid have been taken up by the *marl*, we will know how many grains of the 50 grains used, are carbonate of lime, (which when multiplied by two will give the percentage) and this is done by the ammonia solution, for it is so prepared, as that two divisions of it will neutralize one of the acid, so that by adding the ammonia until all the acid not taken up by the carbonate of lime is neutralized, we know how much acid has been used by the marl, and as every degree corresponds to one grain of the carbonate, it is easy enough to arrive at the quantity of this latter substance. An example would, perhaps, furnish a better idea of the principle; supposing that the 50 grains of the marl contained 25 of carbonate of lime, now, from the nature of the acid preparation, one half of the acid would be taken up by the lime, and one half left free, so that when we add the ammonia, it will take one half of it to neutralize this excess, and at the conclusion of the experiment, it would stand at 50, which signifies that the substance originally contained 50 per cent. of carbonate of lime.

Note.—The acid solution is prepared as follows:—Weigh out 50 grains of dry finely powdered pure carbonate of lime, or what is better, carbonate of lime precipitated by carbonate of potash or soda, from any of the solutions of lime, place this in a convenient vessel, and add to it about half a wine-glass of water; then take the muriatic or nitric acid of commerce, dilute it with its own bulk of water; with this liquid fill the *Calcarimetre* up to the 100dth point, let the acid fall gently upon the lime, so as not to create too great effervescence, and by proceeding carefully with the aid of the Litmus paper, the point at which the carbonate of lime is completely taken up, is easily found, for the solution will then turn the Litmus paper red. When we see that nearly all the carbonate is taken up, the acid should be added in very small quantities at a time, and the solution should be stirred considerably, for the purpose of bringing the lime in contact with the different parts of the liquid. After sufficient acid has been added for the purpose before stated, the point at which the acid stands should be noticed, and

by taking the difference between that and one hundred, we are furnished with the number of degrees employed in the solution of the 50 grains; but as it is necessary so to prepare the fluid, as that it will require 50° to dissolve the same quantity, we dilute with the proper quantity of water; for instance, suppose it marked 65° after the experiment, this indicates the use of 35° of the acid; now instead of 35° we wish it, so that it will require 50° to dissolve the same quantity, and all that is necessary to do, is to make up the difference between 35 and 50 in water, that is to say, that to every 35 parts of the acid solution, 15 of water must be added; after this is done, the solution may be again tested, and any slight modification made.

The solution of ammonia is prepared with ease after the acid is ready; the manner of doing it is to measure out 50° of the acid, let it fall into a vessel, then having made a mixture of two parts of the ammonia of commerce, and one of water, the Calcarimetre is filled with it, and then it is allowed to flow upon the quantity of acid measured out, and by means of a piece of Litmus paper, *reddened by an acid*, the point at which the acid become neutralized is detected, (it turns the red blue.) Suppose that the fluid then marks 20° on the instrument, 80° have been used to saturate the acid, now it is wished so to arrange it, that it will require 100° to saturate 50° of the acid, therefore, we have to add 20 parts of water to 80 parts of the already diluted ammonia. In making either of these solutions, one gallon can be made with the same facility as one ounce, and after the ammonia has been once prepared, the acid can be made by its aid, independent of the carbonate of lime. I had almost forgotten to mention the use of the lower mark *b* in Fig. 2; it only serves when by some cause or other in making the analysis, too much ammonia has been added, where this is the case, the point at which the ammonia stands in the stem is ascertained, and the instrument (Fig. 2) is filled to this lower mark with the acid, which is abded to the mixture, and the Calcarimetre is again taken up, and filled to the point at which we left off, and the experiment continued as before; when the experiment is finished, 10 is added to the number at the point which the liquid stands, to furnish us with the percentage of carbonate of lime.

J. LAWRENCE SMITH, M. D.

From the Charleston Mercury.

ANALYZING OF SPECIMENS OF MARLS.

St. John's Berkley, May 12th, 1843.

MESSRS. EDITORS,—Having just finished analyzing nearly all the specimens of marls (and limestone) which I had selected from the various localities recently visited and examined, the results, as stated below, are offered for publication, for the information of all concerned. It is proper to state, that the operations of my last day of these labors, were much facilitated and forwarded by the aid of Dr. J. Lawrence Smith, of Charleston, with the use of the very convenient and cheap apparatus for analyzing marls, which he has invented, and of which I trust he will publish a description.

EDMUND RUFFIN,
Agricultural Surveyor of South-Carolina.

Marls, &c. from the borders of Ashley River.

1. John S. Brisbane's landing, nine miles from Charleston, taken from the shore below high-water mark, contained of pure carbonate of lime, 64 per cent.
2. Do. taken 26 feet below the surface of the river at low tide, 75 per cent.
3. Lumps of stoney hardness, and full of impressions of shells found in great quantity in that neighborhood, lying a few feet above the marl, only 6 per cent.
4. Marl from O'Neale's landing, 76.
5. Do. from Drayton Hall, 63.
6. Do. Bee's Ferry, 50.
7. Do. Magnolia, 75.
8. Do. Greer's Landing, near Middleton Place, 52.
9. Do. Pringle's, 75.
10. Do. Cattell's Bluff, 52.
11. Do. Cohen's, 62.
12. Do. John A. Ramsay's, 67.
13. Do. Cedar Grove, J. M. Dwight's, 76.
14. Do. Clements', 78.
15. Do. Wassamasaw Swamp, head waters of Ashley, 72.

Marls from borders and neighborhood of Cooper River.

16. From the Grove, Dr. Edmund Ravenel's, 52 per cent.
17. Do. Mulberry, (Milliken's) supposed average quality, 60.
18. Do. supposed richest, 76.
19. Do. supposed poorest, 42.
20. Do. Lewisfield, (Simons') 84.
21. Do. Mepkin Bluff, 67.
22. Do. Point Comfort, (R. W. Roper's) 79.
23. Do. Steep Bluff, 80.
24. Do. in Monk's Corner road, near Moss Grove, 80.
25. Do. Rectory, (in road) 80.
26. Do. Dr. Benjamin Huger's, 95.
27. Do. Monk's Corner road, near Broughton's Swamp, peculiar kind, 46.
28. Do. Col. Ferguson's, similar to last, 58.
29. Nodules like chalk, in Col. Ferguson's marl, 96.
30. Marl, ordinary kind, of this formation, from H. Smith's, Goose-Creek, near Cooper, 82.
31. From H. W. Ravenel's, near Santee Canal, on head waters of Cooper, 95.
32. Do. Isaac Porcher's, jr. five feet under swamp, leading to Cooper, 67.
33. Do. another sample, 81.
34. Do. Philip Porcher's, 86.

35. Do. Frederick Porcher's, (hard) 92.
36. Do. Somerset, Wm. Cains, 87.
37. Do. Robert Mazyck's, of carbonate of lime, and also a large portion of green sand, 25.
38. Do. overlying earth of same, and much green sand, 17.
39. Do. white and hard marl under the green, 90.
40. Do. Deveaux's Mill Pond, 87.

Marl (and Limestone,) from Santee River and its Neighborhood.

Marl from Ball's Dam, Dr. J. S. Palmer's, 91 per cent.
Do. Col. J. S. Palmer's, (landing of old Jamestown) and also a considerable proportion of green sand, 66.
Do. from Liquiex, Williamsburg, 91¼.
Do. Robert Gourdin's, Lenud's Ferry, 93.
Do. William Sinkler's (Eutaw Spring) near mansion, 96.
Do. from within deep sink, near Eutaw Spring, 88.
Do. hard rock protuding above surface of the battle field, 92.
Do. James Gailliard's, upper stoney stratum, 93.
Do. Rock Creek, soft marl, 94.
Do. upper stratum, harder, 95.
Do. do. hardest surface, 93.
Do. soft marl, containing a notable proportion also of green sand, 94.
Limestone, R. Gourdin's, lower stratum, 97.

Marls and Limestone from Pee Dee River, (Marion.)

Marl from Birch's Ferry, 36 per cent.
Do. Clay Wall, above Jeffrey's Creek, 24.
Do. Henry Davis', river bluff, gray marl, 42.
Do. Gordon's, Willow Creek, 45.
Do. Bigham's, on road, supposed average quality, 32.
Do. Gibson's river bank, 10.

N.B.—The above Peedee Marls belong to the secondary formation, and have alternating layers of limestone, of which the following are specimens :—

Grey Limestone, from H. Davis' river bluff, 86.
Do. Myers', near Jeffrey's Creek, 84.
Do. do. another specimen, 76.
Do. Gordon's, Willow Creek, 77.
Marl, Legget's, on road, upper part, 57.

Do. H. Davis', river bluff, yellow land,	(Miocene,)	78
Do. do. (No. 9,) ravine, soft	do.	60
Do. do. (No. 8,)	do.	64
Do. do. (No. 2,)	do.	66
Do. near Spring on Gibson's land,	do.	74
Do. Godfrey's Ferry, softer layer,	do.	69
Do. do. do. harder,	do.	89
Do. Witherspoon's bluff,	do.	62
Do. lower stratum of cavern, Gibson's land on Peedee,	do.	81

Marl of latest formation, post-pliocene, found near the Sea-Coast.

Marl, from Stone Creek, Edisto Island, 18 per cent.
Do. another specimen, 27.
Do. James Seabrook's, Edisto, 58.
Do. Distant Island, Jos. Hazel's, 47.

All the specimens of Marl from and near the Ashley, Cooper and Santee Rivers, without question are from the same connected and continuous great bed; and which has a horizontal extension within South-Carolina, far greater than I have yet traced. The enormous thickness of this bed may be inferred from the interesting fact that the deep boring for water in the City of Charleston in 1824, to 335 feet, was, for 189 feet, certainly, and most probably for 242 feet, through this same body of Marl. This may

be clearly established by examining the numerous specimens of the earth drawn up by the auger, which have been preserved in the Medical College. Of these, marked from 120 to 309 feet, (the extremes of all kept,) I have tested only the following; but all others appeared to the eye to be of the same bed, though all were no doubt altered more or less by the boring and mixture with other earths.

Specimens taken 120 feet below the surface of the earth contain of carbonate of lime,	65	per cent.
Do. 135 feet,	56	"
Do. 160 do.	69	"
Do. 162 do.	44	"
Do. 253 do	53	"
Do. 270 do.	66	"
Do. 274 do.	79	"
Do. 292 do.	79	"
Do. 309 do.	74	"

CULTIVATING GROUND WITHOUT MANURE.

We take the following article from the New-York Sun, of the 31st ult.

The London Gardener's Chronicle, conducted by Professor Lindley, brings to notice in the followlng article, the recent discovery in Germany, of a plan of superceding manure in cultivation:

(Communication on the art of cultivating the ground without manure.) By F. H. Bickes, Frankfort, on the Maine, 1842, pp. 31.

Wonders will never cease! While our agriculturists are eagerly discussing the comparative advantages of particular soils, and studying the theory of manures as propounded by Sprengel and Liebig, a countryman of these distinguished professors comes forward to proclaim that their labors are vain; for, if we are to believe him, he has discovered the art of growing luxuriant crops on the poorest lands, and without any manure whatsoever; and the cost of the process is so trifling, that for the acre of wheat or maize, it does not exceed five pence sterling; and for rape, cabbage, &c., amounts to only about half that sum. At first we were disposed to consider such extraordinary pretensions as an effusion of quackery, and entitled to little or no credit; but our incredulity has been somewhat shaken by the numerous and respectable attestations which the author has appended to his pamphlet, and which tend to prove that his method has been practised with success, during the last twelve years, in various parts of Germany and Holland. Thus the certificates from Vienna, dated in 1829 and 1830, declare that Mr. Bickes's process, which would seem to consist in some preparation of the seed, "renders all dunging unnecessary, is applicable to the poorest soils, and to all sorts of plants, and imparts to them a wonderful degree of vegetation and fulness;" and they gave the results of the experiments in the Imperial garden of the Chateau, from which it appears that wheat raised from seed sown by Mr. B. had larger ears and more grains than that produced from unprepared seed; that the barley showed ears with four rows and a larger number of grains, while that from unprepared seed, had only

two rows and a smaller proportion of grains on each stalk; and the Indian corn exhibited a larger number of much stronger and thicker heads.

At Bundingen, again, some plants of the sunflower, treated according to Mr. B's method, grew to the height of 10 to 11 feet, with woody stems of eight and a half to nine inches in circumference. Ten or twelve potatoe plants, of a large yellow sort, called Marburger, yielded each, on the average, 30 good sized tubers, with stem and branches seven feet long; and maize, which grew partly singly and partly in rows, had from two to five, and in some instances, as many as eight and nine heads. These crops were obtained in the garden of Count Isenburg; and we are further assured by the certificate, to which are attached the signatures of two burgomasters, the court gardener, a grand ducal counsellor, and other official personages, that they were raised in ground but partially dressed, and in the midst of tall weeds! The trials of this method in Holland, made in the summer of 1834, were attended with results not less astonishing: prepared wheat and rye, though sown thick, gave from 50 to 60, and even 80 stalks from one grain; and a plant of barley bore eight large ears. Buckwheat rose to four and a half and five feet; flax had four and five stems from one seed, and Indian corn grew from nine to ten feet in height, with four to five heads from a single corn. The green crops were equally luxuriant.

Liebig's Agricultural Chemistry, which has been republished in one of the cheap editions of the New World, teaches us that *ammonia* is the great stimulant to the growth of plants. At one of the late agricultural meetings in London, Dr. T. C. Jackson suggested that seeds might be coated with some gummy substance, and then rolled in guano, enough of which would readily adhere, to produce all the effects ascribed to those foreign prepared seeds, —the new plan being a secret.

A mere teaspoonful of guano, applied to a newly struck rose cutting, of a few inches in length, had been sufficient the following spring, to produce a bush of some six feet in height. It is the received opinion, that the nourishment of vegetable life is derived from the atmosphere.

POUDRETTE AS A MANURE.

The following communication, with the accompanying letters, extracted from the pamphlet alluded to below, and written by persons who have used the Poudrette, came to hand too late for our last Number. Since that time, it will be perceived from a notice on the last page, that the proprietor of the Cabinet has made atrangements with D. K. Minor, for the sale of the article in Philadelphia. It is coming extensively into use, around New-

York, where it is manufactured; and from the frequent inquiries made of us in relation to it, we have no doubt farmers here are desirous to test its value. On corn, grass, potatoes, turnips, cucumbers, melons, &c., it has been found to act very beneficially.*

To the Editors of the Cabinet,

GENTLEMEN,—I send you herewith a small pamphlet containing several statements made by practical farmers, in relation to the use of *Poudrette* as a manure, and shall be much obliged to you if you will publish such extracts from it, as you may deem of interest to your readers. Many inquiries have been made in relation to this valuable manure, but its recent introduction into use in this country, and the limited number, comparatively, who have used it, have prevented its becoming generally known and appreciated, as it deserves. The statements which you will find in the accompanying pamphlet, were made by gentlemen of intelligence and experience, who have used the article in considerable quantities for several years, on various crops and soils; and who may therefore be supposed to understand its value. I am fully satisfied that the time is not distant, when it will be used by all who can obtain it—and that you will benefit the cause of agriculture, by bringing the subject before your readers.

Respectfully yours, D. K. MINOR.

March 10, 1843. *No. 113 Nassau-street, New-York.*

Mr. Edward Condict, of Morristown, New-Jersey, under date July 25th, 1842, says:—

SIR,—In reply to your circular of the 20th inst., asking information relative to the effects of Poudrette on crops during the years 1841 and 1842, I would state, that in the year 1841, I planted a field of corn, on about one-third part of which, I used the Poudrette, putting a small handful, say somewhat less than a gill in each hill. The other part of the field I manured with good barnyard manure, a shovel full in each hill; the corn was planted about the 10th of May, and by the 20th of June, when the corn was dressed out the second time, that part where the Poudrette was used, was more than as large again as the corn on the other part of the field; it also ripened a week or ten days earlier than the other; there was no perceptible difference in the yield. I also used it with good effect on buckwheat, potatoes, and turnips, particularly the latter. In order to ascertain its effect on turnips, I sowed a strip in the middle of the piece, mixing the turnip seed and Poudrette together, and sowing it broadcast, the effect was very perceptible, the turnips were larger and fairer, and were not disturbed by grasshoppers or any other insect. The soil on which the above mentioned crops grew, was light and somewhat inclined to sand, or gravel.

* By reference to the advertisement of Mr. J. D. Legare, on the cover of the Southern Agriculturist, it will be found he is Agent for vending the article in Charleston.

Early in October last, I used the Poudrette on a loamy soil, somewhat inclining to clay, which I had prepared for wheat; there was no difference in the soil nor in its preparation, except that on about one-fourth part of it, after the wheat was sown, about 20 bushels of the Poudrette to the acre, were also sown, broadcast; and the result is, that on harvesting that part where the Poudrette was put, is much the heaviest grain, and but very little injured with the rust or mildew, while the *other* part of the field is considerably injured.

I am so well pleased with the Poudrette, that I shall for the future discontinue the practice of using barn-yard manure in the hill. Yours, &c. EDWARD CONDICT.

Mr. Fullager, an experienced gardner in the employ of S. W. Anderson, Esq., at Devoes Point, speaks of its astonishing effects on water-melons, as follows:

To D. K. Minor, Esq.

SIR,—Agreeably to your request in your circular, I have the pleasure of stating, that I have used the Poudrette manufactured by your company, and have seen its good effects upon flowers and hot-house plants, but I noticed it *more* particularly when used for *melons*.

I planted water-melons in rather poor and gravelly soil, in 1841, by digging holes 18 inches wide, and put one quart of Poudrette, mixed well with earth, in each hill, when the plants came up, I added one pint more of the Poudrette to each hill, spreading it about three feet, and hoeing it well in. The effect was, that the vines grew vigorously, and in the small patch of three square rods of ground, I gathered 65 melons, weighing from 30 to 40 pounds each.

I gave some of the same seed to a neighbor of mine, who had planted it by mixing one shovel full of good yard manure to each hill,—the soil was the same as mine, and the largest melon produced in the patch, did not weigh over 18 pounds. When he discovered the differenced, he at once made up his mind to subscribe for a share of your stock, which he has done, and is well pleased with his bargain. E. FULLAGAR.

The following letter is from Mr. Joseph Tyrrell, of Trenton, New-Jersey, dated 9th of August, 1842; he says,

"I have used Poudrette on my farm near this place, the last and present year; and am quite satisfied in regard to its virtues as a manure. My soil is a sandy loam. Last year I applied it to corn on rye stubble, ploughed under the previous fall, say a small handful to each hill, at the time of planting, and in immediate contact with the seed. But I had not as much as was necessary for the whole piece. After the corn came up, and during its growth, the difference in the appearance of the part to which Poudrette had

been applied, and that which had none, was very great; the former was luxuriant in its growth, the color a rich dark green, while the latter was rather sickly in appearance, and the plants less vigorous. The effect produced on the corn by the application of Poudrette, was noticed by several of my neighbors who came to look at it. Being unfortunately sick at the time of cutttng up and husking the corn, I was prevented from noticing the returns particularly, but I am satisfied that they were increased by the application of the Poudrette, no other manure being applied to any part of the land. I have applied it to corn this year under similar circumstances, and so far as I can see at present, with most favorable results. I have also used it in my garden with great success. In March last, I planted six rows of early peas, four of the rows were manured with Poudrette, sprinkled liberally over the seed. These came up five or six days before the others, they grew more luxuriant, came in blossom ten days sooner, and yielded much more abundantly than those which had no Poudrette. I have tested its merits as a manure for cucumbers and melons, and prefer it to any other for those articles. Early in the spring of the present year, I applied some to a strawberry bed, planted out in September last. I sprinkled it pretty freely on the bed, and worked it in with the prongs of a small rake. Its effects were visible after the first shower of rain. The plants grew steadily and rapidly, and produced large and clean fruit."

For the Southern Agriculturist.

FRUIT TREES.

Mr. Editor,—In looking over your Gardener's Calendar in the May Number of the Agriculturist, I find under the head of Fruit Garden, the following directions, viz.—"Examine carefully your Peach, Nectarine, and Apricot trees. See that they are not infested by insects and caterpillars." I have done so, and indeed, I had been using every means I could think of, to rid my trees of these little vermin before I saw your directions. But, Mr. Editor, you should give us the remedy after pointing out to us the disease.—Those which have done the most injury to my trees, are a small brown (nearly black,) insect, resembling in shape the cabbage lice; they seem to be of all sizes, from the egg which is a mere speck on the leaf, to that of a large pin's head. As I am no entomologist, I am unacquainted with their habits, and the means of ridding myself of them; nor do I know which of the numerous larger insects I see climbing about the tree, is the cause of all this mischief.

Will you be good enough, Mr. Editor, to throw some light on the subject, or request some of your subscribers to do so.

They have already destroyed all my plums, and the trees have a sickly appearance. They appear to be busily occupied in drawing out the juice of the tree, as it rises to the leaf.

Yours, &c. L.

We have selected from the Baltimore *American Farmer*, the following preventative against the increase of insects on trees, which if applied, may answer our correspondent's purpose and save his trees. We should be glad if some friend, who has a knowledge of Entomology, would answer the question above, in a satisfactory manner. But we are in hopes the late rains and cold change have had the desired effect of driving away the destroyers. —ED. So. AG.

FRUIT TREES.

"Give them speedily a washing with a solution of potash, all over the trunk, and as far up as you can reach the large limbs. Make the solution thus: dissolve 2 lbs. of potash in 10 gallons of water, and put it on with a large sized painter's brush: first rubbing the bark with a hard horse or scrubbing brush. In two weeks after having done this, give your trees another painting with the following:—Boil 2 lbs. of tobacco, or tobacco stems, in a gallon of water, until one half the quantity is evaporated; then take 5 gallons of good thick soft soap, mix with this 2 lbs. of sulphur, and then stir in the tobacco decoction until the whole is thoroughly mixed together—give to your trees a coat of this."

MISCELLANEOUS.

ORANGES.

Dr. Tegarden, when we saw him in New-Orleans, related to us a curious and useful fact, in regard to the cultivation of Orange trees. He says, that if an entire orange is placed in the ground, one seed of the same will bear fruit in two years. The plant may be designated by its increase of strength and vigor. This reminds us of a fact in regard to apple trees, which an old farmer of this parish related to us some time since. He says, that he has frequently sown apple seed, and has found in one cell of the core, a single pip, which always produced fruit precisely similar to that from which it was taken, while every other pip produced a different variety.—*Pl. Banner.*

It has been truly said, that the humble man is like a good tree—the more full of fruit the branches are, the lower they bend.

RUTA BAGAS IN SOUTH-CAROLINA.

A letter from Alfred Huger, Esq. Longwood, St. Thomas' Parish, South-Carolina, to the editors of "The Cultivator," says—"I have raised the ruta baga, weighing ten pounds without the leaves or tops, taken promiscuously from the patch; and I have a friend near me, who has had them weigh fourteen pounds. The same land would have produced 300 bushels sweet potatoes to the acre."

GRAFTING.

Melt a little beeswax and tallow together, and if it is at hand, stir in a little powdered chalk, and while hot dip in some strips of old calico or cotton cloth. Tear them into strips of such width as may be most convenient to wrap around the stock and scion. Let the stock and scion be covered, so as to prevent the escape of the sap or the introduction of water, and the work is done. This will I think, be as good as the surgeon's adhesive plaster, or any more complicated or expensive grafting wax.

For the Southern Agriculturist.

THE PLOUGH.

Of all the occupations,
And trades of every kind,
Through the most distant nations,
There is not one you'll find,

More useful in its station,
If History be true,
There is not one so ancient,
As is the gainful Plough.

Hold Ploughman said the Gardner,
Count not your trade with ours,
But walk in through the Garden,
And see these early Flowers.

See every curious border,
And pleasant walk review,
There's no such peace or pleasure
Proceeding from the Plough.

A Paradise of pleasure,
A Garden is you know,
And Eden was a Garden,
Five thousand years ago.

Old Adam was a Gardner,
When he was just made new,
Our Trade is then more ancient,
Than is your painful Plough.

Then said the jolly Ploughman,
No calling I despise,
So each man for his living,
Upon his Trade relies.

Though Adam in the Garden,
Was sent to keep it right,
He sojourned not in Eden,
Longer I think than one night.

He eat not of his labour,
But what was not his due,
He was driven from the arbour,
And sent to work the Plough.

Some of each generation,
This calling do pursue,
That Bread might feed the nation,
The produce of the Plough.

You see the hardy Mariners
Who range the pathless seas,
To bring home foreign treasures,
For those who live at ease.

They must have their provisions,
Their sails and cordage too,
And these are all productions,
From the labours of the Plough.

Nor can a Tradesman live,
If we consider right,
The Mason, Smith the Weaver,
The Tailor and the Wright.

The Millers have no corn to grind,
Nor could they take their toll,
But they and thousands more we find,
Subsisting on the Plough.

Charleston, S. C. May,. 1843.

MONTHLY CALENDAR

OF

HORTICULTURE AND FLORICULTURE.

FOR JUNE, 1843.

VEGETABLE GARDEN.

In this month there are but few vegetables that can be planted as a general crop; still, for a constant supply in our gardens around the city, it is advisable, to plant a few of each of the kinds enumerated last month.

Turnip.—A bed of Turnips may be sown this month as an experiment. These may be sowed broad-cast, and at first thinned to within three or four inches of each other; in the course of four or five weeks, you may begin to remove every alternate one for table use.

Snap Beans.—It is not yet too late to plant Bush or Snap Beans, to succeed those planted in former months; if the weather is very dry they may be covered three or four inches deep to keep up the moisture.

Beets, Carrots and Parsnips.—The seeds of these vegetables, although they do not come up freely during the heats of June, may be planted at this time. If they succeed, which they are likely to do if the beds are somewhat shaded, they will produce fine vegetables for the table in autumn. They are to be treated as directed in former months.

Musk and Water-melons.—You may yet venture, for a late crop, to plant seeds of these delightful fruits; they will come in at a time when most of our melons have disappeared from the market. This may also be done with Squash and Cucumber.

Green Corn.—You may continue every three or four weeks to plant corn, to be used as mutton or Green Corn. We have found that the Northern Flint Corn is more productive, and of quicker growth, than that of our own State. The seeds, however, require to be changed every two or three years. These seeds will come up several days earlier, if when about to be planted boiling water is poured over them, and suffered to cool; or let them be soaked a night in ley-water.

Cabbages.—The Cabbage Plants produced from seed sown in April, will now be fit for transplanting. Prepare a piece of ground in an open situation of your garden. Scatter over it a layer of about an inch thick of good rotten manure; dig it in evenly; then draw up the ground into small ridges or beds, 6 or 7 inches high, and let the tops of them be flat; be careful that no gullies are left for the water to settle in, which would occasion the plants to be scalded and destroyed. The plants may be set from two to two and a half feet apart, according to their kinds.

Cauliflower and Broccoli.—You may, in the commencement of this month, sow a few seeds of these most delicious of all vegetables. If preserved through the heat of the summer which they are likely to be, when planted in a dry soil, they will head so early in autumn as not to be endangered by frosts.

Vegetables for Pickling.—This is a good time for planting Red Cabbages, the large Bush Beans, &c. for pickles. This will be a valuable acquisition to the table.

Radishes.—You may sow a succession of Radishes every two weeks during this month. The Salmon Radish is to be preferred at this season.

Pull Onions, Garlick and Eschalots.—About the middle of this month the leaves of these vegetables will begin to wither. You may now take up the roots in a dry day, and pull off their leaves to within 4 or 5 inches of the bulb. Let them be laid on a dry scaffold to harden for about a week, where they may be frequently turned, when prepared in this manner they will keep through the summer in any dry situation in an out-house.

Okra and Tomatoes.—Your Okra and Tomatoes will now require thinning and hoeing, and the latter being of a procumbent growth should be supported by sticks.

FRUIT GARDEN.

There is not much to be done in this Garden during this month. The suckers from the Peach and Nectarine trees may be removed by the hand. The worm which infests the root (*Aegeria exitiosa*) may now be easily found in the bark around the surface of the earth, and may be removed by a sharp pen-knife, without injuring the growth of the tree. The fruit that has been perforated by the *Curculia*, should be removed and destroyed, for each of these contains a worm, which if suffered to remain unmolested, would soon crawl into the earth and undergo transformation preparatory to its farther depredations.

The fruit of the Vine will now be in a state of growth. The young vines should be pruned with great care, leaving a sufficient quantity of wood for the next year's crop, for on this your success will depend; tie up your vines, remove decayed and superfluous leaves, cobwebs and the aiders of insects.

POUDRETTE.

THE best, the most convenient, and the cheapest MANURE for those who have to purchase and transport any distance. One barrel of Poudrette (4 bushels) contains as much fertilizing property as sixty bushels of stable or yard Manure. For Corn, Potatoes, Melons, Grape Vines, Fruit Trees, and all kinds of garden vegetables, and especially for Flowers, there is nothing equal to it as a fertilizer, and it may be used with as little inconvenience as ashes, or plaster, or sand—it has been extensively used by many farmers during the past four years, and the demand is rapidly increasing. Present price, $5 for three barrels, or $15 for ten barrels, delivered on board of vessels in the harbor of New-York, at one day's notice. Orders by Mail, cash enclosed, may be addressed to, and will be promptly attended to, by

D. K. MINOR, Agent, 118 Nassau-street, N. Y.

The subscriber having accepted the Agency for the sale of Poudrette, will receive and have executed such orders, as may be forwarded to him, (enclosing the cash) at the New-York prices, with the addition of the expenses incurred. In all cases, payment must be made, on the delivery of the article, without distinction of persons.

March 26. JOHN D. LEGARE, 83 East-Bay.

Ploughs, Cultivators, Corn & Cob Crushers.

THE Subscriber keeps constanly on hand, Ruggles, Nourse & Mason's best PLOUGHS, which have taken numerous premiums at the North, and which he has sold for the three last years, giving general satisfaction to our Planters; they vary in price from $6 to $10, the first being a light one horse Plough, the last a four horse Plough. Also, Freborn Ploughs, from $3 25, upwards, according to the size. The Cultivators are of the best construction, and now generally used in cultivating Corn at the North.

CORN & COB CRUSHERS, made by Hussey, Murray & Sinclair, with every kind of Implement necessary for the Field or Garden culture, consisting in part, of STRAW-CUTTERS, CORN SHELLERS, HOES, SPADES, SHOVELS, AXES, HATCHETS, DUNG FORKS and DRAGS, SCYTHES, CRADLES, &c., &c.

AND

An extensive assortment of *GARDEN and FIELD SEEDS*, which are warranted to be of the best varieties. Most of these are imported direct from Europe, by the Subscriber,

J. D. LEGARE,

October 29. *No. 81, East-Bay, Charleston.*

French Fruit Trees—Camillas, &c.

THE Subscriber has on hand an excellent assortment of FRUIT TREES, imported by him direct from Paris last Spring, and which he had planted out here They consist of PEAR, APPLE, CHERRY, APRICOT, PLUM, Madeira WALNUT and JUJUBE TREES. Many of the Pears and Apples blossomed last Spring and some bore fruit. It is therefore *presumed* that a large number will do so the coming season. He also expects in the month of December a further supply of Fruit Trees, Roses &c. from Paris.

He offers also, for sale, Peach, Nectarine & Apricot Trees of American growth; and will also receive orders which will be executed at 10 per cent. on cost and charges, for any discription of Fruit Trees, Ornamental Shrubs, or Plants, from the Nurseries of *Sinclair & Corse, of Baltimore, Robert Buist, of Philadelphia*, or any of those in the neighbourhood of *Boston*.

The prices of the French Fruit Trees vary from $1 to 2, according to the size of the Trees. The American Trees are at from 37 to 75 cents.

Also, remaining from last year's Stock,

A few very fine varieties of CAMILLAS, AZALIAS and other Ornamental Green-house Plants, and a choice collection of ROSES, consisting of Tea, Bengal, Bourbon, Perpetual Damask, &c. He expects also, to receive a further supply of the above at the proper season.

J. D. LEGARE,

October 29 **No. 81, East-Bay, Charleston.**

THE SOUTHERN AGRICULTURIST.

☞ In consequence of letters and communications being frequently received by the subscriber, addressed to him as "Editor of the Southern Agriculturist," he deems it proper to state, that he is in no way or manner whatever, connected with that Journal, either as Editor, Conductor, Proprietor or Publisher. That it is now under the sole control and direction of its Proprietor, Mr. A. E. MILLER, to whom all communications and letters should be addressed.

J. D. LEGARE.

Feb. 24*th*, 1843.

LIST OF PAYMENTS.

D. G. Joye, for 1842 and 1843.
Dr. Geddings, for 1843.
Major Samuel Porcher, 1841, '42 & '43.
Robert Stafford, St. Mary's, Georgia, for 1840, '41, '42 and '43.
St. Helena Ag. Society, 2 copies, 1843.
Dr. B. A. Blakey, Alabama, 1842.
Col. T. P. Alston, Georgetown, 1842 & '43.
Robert Stewart, for 1843.
Edward Turner, Natchez, for 1843, and 6 months of 1844.
Col. R. F. W. Allston, Georgetown, 1843.

☞ **The Subscribers to the Southern Agriculturist are reminded, that the Price of the Journal was reduced this year to all those who paid in advance; those who are still in arrears for this and former years, are respectfully solicited to make their payments.**
